

Name: \_\_\_\_\_

## Plumbing

### Directions:

Evaluate the student by checking the appropriate number to indicate the degree of competency.

### Rating Scale (0-6):

- 0 No Exposure** – no experience/knowledge in this area; program/course did not provide instruction in this area
- 1 Unsuccessful Attempt** – unable to meet knowledge or performance criteria and/or required significant assistance
- 2 Partial Demonstration** – met some of the knowledge or performance criteria with or without minor assistance
- 3 Knowledge Demonstrated** – met knowledge criteria without assistance at least once
- 4 Performance Demonstrated** – met performance criteria without assistance at least once
- 5 Repetitive Demonstration** – met performance and/or knowledge criteria without assistance on multiple occasions
- 6 Mastered** – successfully applied knowledge or skills in this area to solve related problems independently

### NOTES:

\* = Core competencies (essential for the first day on the job).

# = Core competencies with #3 (Knowledge Demonstrated) as the highest level of expected achievement.

0	1	2	3	4	5	6	A. Appreciate and apply all personal and workplace safety procedures	Notes:
							*1. Demonstrate good safety practices	
							*2. Demonstrate proper techniques for lifting and carrying	
							#3. Exercise extreme caution when working around electric lines and equipment	
							*4. Maintain work area properly	
							*5. Adhere to safety signs and color codes	
							*6. Identify and report potential safety hazards	
							*7. Practice ladder and scaffold safety	
							*8. Safely operate hand and power tools	
							#9. Properly handle gas cylinders, hoses, and regulators	
							*10. Wear required safety equipment	
							#11. Identify types of fire extinguishers and their proper uses	
							*12. Practice fire safety when operating heating equipment or working with hot materials	
							*13. Demonstrate safe practices when using flux	
							*14. Demonstrate safe use of solvents	
							#15. Read and interpret MSDS sheets	
							*16. Demonstrate an awareness of locating and verifying buried utility lines	
							#17. Shoring and bracing excavation	
							#18. Demonstrate awareness of confined space entry	
							#19. Identify hazardous materials on site (i.e., leaking gas, asbestos)	

								#20. Work safely around laser equipment	
								*21. Demonstrate awareness of OSHA guidelines	
								#22. Administer first aid and CPR	
								Other:	

0	1	2	3	4	5	6	B. Demonstrate employability skills	Notes:
							*1. Identify employment opportunities in the plumbing trade	
							*2. Complete a job application thoroughly	
							*3. Develop and present a resume	
							*4. Maintain a professional appearance (neat, clean, groomed, appropriately dressed)	
							*5. Demonstrate effectiveness in oral and written communication	
							*6. Demonstrate good interpersonal skills	
							*7. Demonstrate a polite/respectful attitude	
							*8. Demonstrate good interviewing skills	
							Other:	

0	1	2	3	4	5	6	C. Demonstrate basic trade and applied academic skills	Notes:
							*1. Demonstrate basic reading skills	
							*2. Perform general mathematical calculations	
							*3. Use good time management skills (i.e., efficient use of time on job site)	
							4. Lay out and plan any given installation	
							#5. Define plumbing terminology	
							6. Read and interpret Americans with Disabilities Act (ADA) requirements	
							*7. Read measuring devices	
							8. Read and interpret a blueprint	
							9. Sketch a plumbing layout	
							#10. Read and interpret catalog and rough-in information	
							11. Read and interpret specifications	
							#12. Prepare a bill of materials	
							13. Read and interpret applicable codes	

								14. Identify basic structural framing components	
								15. Use judgment for structural penetrations (i.e., drilling, cutting, notching)	
								*16.Solder a 95/5 copper joint	
								*17.Assemble a soft and rigid lead-free copper joint	
								18. Silver braze a copper joint	
								19. Assemble a plastic joint/connection	
								Other:	

0	1	2	3	4	5	6	<b>D. Use and maintain hand and power tools consistent with industry and safety standards</b>	Notes:
							*1. Identify types of pipe cutters	
							*2. Cut cast-iron pipe with a snap cutter	
							3. Cut cast-iron pipe with a ratchet cutter	
							#4. Cut cast-iron pipe using a hammer and a chisel	
							*5. Cut cast-iron pipe using hand saw	
							6. Cut plastic pipe using tubing cutter	
							7. Cut plastic pipe using ratchet shear	
							*8. Cut copper pipe using tubing cutter	
							9. Cut vitrified clay pipe using a hammer and chisel	
							10. Cut vitrified clay pipe with a snap cutter	
							11. Operate a three-way threader (by hand)	
							12. Operate an drop-head ratchet threader (by hand)	
							13. Operate an adjustable 1”-2” ratchet threader (by hand)	
							*14.Assemble fittings using two pipe wrenches	
							15. Operate a power threader with a nipple chuck	
							16. Operate a power vise with a three-way threader	
							17. Operate a power vise with a drop-head ratchet threader	
							18. Operate a power vise with a quick-open threader	
							#19.Operate a right-angle drill/high torque drill	
							#20.Operate a chop saw	
							#21.Operate a reciprocating saw	

								*22. Operate a fuel-air torch	
								23. Operate plastic fusion equipment	
								24. Operate laser equipment	
								Other:	

0	1	2	3	4	5	6	E. Construct (Rough-in) and test waste systems consistent with industry and safety standards	Notes:
							1. Construct a cast-iron/lead and oakum assembly	
							2. Construct a cast-iron assembly with compression gasket joints	
							3. Construct a no-hub cast-iron pipe assembly	
							4. Assemble a vitrified clay pipe compression joint	
							5. Install a clay-to-plastic adapter coupling	
							6. Excavate a trench and maintain desired grade	
							7. Install a floor drain	
							8. Rough-in for a three-fixture bath, including main vent and flashing	
							9. Rough-in for a kitchen sink	
							10. Rough-in for a washing machine	
							11. Rough-in for indirect waste	
							12. Install backwater valve	
							#13. Perform a standing water test	
							#14. Perform an air test to manufacturer's specifications	
							15. Install a sump pump	
							16. Install a subsoil drainage system	
							Other:	

0	1	2	3	4	5	6	F. Construct (Rough-in) and test water distribution systems consistent with industry and safety standards	Notes:
							1. Install a building's water service	
							#2. Install a main shut-off valve	
							*3. Assemble soft tubing with flare fittings	
							*4. Assemble soft tubing with compression joints	
							*5. Construct a soft tubing assembly with solder joints	

								6. Install a water distribution system of galvanized steel	
								7. Install a water distribution system of hard-drawn copper	
								8. Install a water distribution system of CPVC (chlorinated polyvinyl chloride)	
								9. Rough-in water supply for a laundry box	
								10. Rough-in water supply for a laundry tub	
								11. Rough-in water supply for a kitchen sink	
								12. Install a sillcock	
								13. Rough-in water supply for a water heater	
								14. Rough-in water supply for three-fixture bath	
								15. Apply a 95/5 solder system	
								16. Apply a lead-free solder system	
								17. Apply a silver brazed system	
								18. Install water hammer arrestors	
								#19. Perform an air pressure test	
								#20. Perform a water pressure test	
								21. Install a pressure reducing valve	
								22. Install a backflow prevention assembly where required	
								23. Install a check valve on a water supply line to a plumbing appliance	
								24. Install a vacuum breaker on a water supply line to a plumbing appliance	
								Other:	

0	1	2	3	4	5	6	G. Install and trim-out plumbing fixtures consistent with industry and safety standards	Notes:
							*1. Identify components of fixture hardware	
							#2. Install a lavatory (cabinet installation )	
							#3. Trim out a lavatory	
							#4. Install a tank-type water closet	
							#5. Install a kitchen sink	
							#6. Trim out a kitchen sink	
							#7. Install a garbage disposal	
							8. Hook up a dishwasher	

							#9. Install a wall-hung lavatory	
							10. Install a gas water heater	
							11. Install an electric water heater	
							12. Install a tub with tub filler	
							#13. Set a shower stall	
							14. Install a service sink	
							15. Install shut-off valves	
							16. Trim out a three-fixture bath	
							17. Install a water softener	
							Other:	

0	1	2	3	4	5	6	H. Service and repair plumbing, fixtures, and appliances consistent with industry and safety standards	Notes:
							1. Replace water closet wax ring	
							2. Repair or replace water closet ball cock	
							3. Repair or replace water closet flush valve	
							4. Replace water closet tank gasket	
							5. Repair or replace flushometer valves	
							6. Clear stoppage using closet auger	
							7. Replace faucet washer and seat	
							8. Replace patented overflow (P.O.) plug	
							9. Replace lavatory trap	
							10. Repair or replace lavatory faucet, two-handled mixing valve	
							11. Repair or replace lavatory faucet, single lever	
							12. Replace tub connected waste and overflow	
							13. Replace tub diverter	
							14. Replace tub shower arm and head	
							15. Replace kitchen sink	
							16. Repair or replace kitchen sink faucet, two-handled mixing valve	
							17. Repair or replace kitchen sink faucet, single lever	
							18. Replace sink waste, basket strainer type	

								19. Replace kitchen sink trap	
								20. Replace kitchen sink continuous waste	
								21. Remove and replace garbage disposal	
								22. Replace gas water heater	
								23. Replace gas water heater control valve	
								24. Replace gas water heater thermocouple	
								25. Replace electric water heater	
								26. Replace electric water heater elements	
								27. Replace electric water heater thermostats	
								28. Replace T & P relief valve with proper discharge type	
								29. Replace water heater drain valve	
								30. Thaw frozen pipes	
								*31. Insulate water lines	
								32. Repair solder joint	
								33. Install repair coupling	
								34. Repair or replace fixture shut-off valve	
								35. Clear stoppage using an electric sewer cable	
								Other:	

0	1	2	3	4	5	6	1. Install/hang pipe consistent with industry and safety standards	Notes:
							1. Install expansion anchors	
							2. Place inserts	
							3. Install stud anchors	
							4. Hang pipe using wire pipe hooks	
							5. Hang pipe using clevis hangers	
							6. Hang pipe using split-ring hangers	
							7. Install beam clamps	
							8. Support pipe using riser clamps	
							*9. Install backing boards for fixtures	
							*10. Install bathtub supports	

								*11. Install backing for shower head supports	
								12. Install pipe sleeves through concrete or masonry wall	
								13. Install fire caulking	
								14. Install unistrut supports	
								Other:	

0	1	2	3	4	5	6	J. Demonstrate leadership skills in the classroom, industry, and society	Notes:
							*1. Demonstrate an understanding of VICA, its structure, and activities	
							*2. Demonstrate an understanding of one's personal values	
							*3. Perform tasks related to effective personal management skills	
							*4. Demonstrate good interpersonal skills	
							*5. Demonstrate etiquette and courtesy	
							*6. Demonstrate effectiveness in oral and written communication	
							*7. Develop and maintain a code of professional ethics	
							*8. Maintain a good professional appearance	
							*9. Perform basic tasks related to securing and terminating employment	
							*10. Perform basic parliamentary procedures in a group meeting	
							Other:	